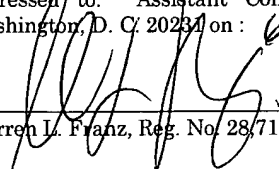


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
PATENT APPLICATION

2817  
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TC 2600 MAIL ROOM

Applicant: Melamed et al.  
Appl. No.: 09/674,550 ✓  
Filed: 3/27/01  
Title: Methods and apparatus for timing recovery of vestigial sideband (VSB) modulated signals  
Grp./A.U.: 2817 ✓  
Examiner:  
Docket No.: P-674550/TI-30247

Assistant Commissioner for Patents  
Washington, DC 20231

CERTIFICATE OF MAILING 37 CFR §1.8(a)	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D. C. 20231 on: 6/21/01	
 Warren L. Franz, Reg. No. 28,716	

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**LETTER RE: POWER OF ATTORNEY AND CORRESPONDENCE ADDRESS  
(WITH STATEMENT UNDER 37 CFR 3.73(b))**

Sir:

This correspondence is submitted to clarify the power of attorney and correspondence address to be effective herein.

The undersigned Texas Instruments Incorporated, a corporation, states pursuant to 37 CFR 3.73(b), that it is the assignee of the entire right, title and interest of the patent application identified above. Attached are copies of assignments from the inventors to Libit Signal Processing Ltd., an Israel company, and to Texas Instruments Incorporated (Reel/Frame unknown), respectively. Also attached is a copy of an assignment from Libit Signal Processing Ltd. to Texas Instruments Incorporated recorded at Reel/Frame 011659/0782.

A Revocation of Power of Attorney, Power of Attorney and Statement Under 3.73(b), all dated 3/22/01, were filed herein by the undersigned corporation on 3/26/01, revoking previous powers of attorney, appointing practitioners at customer

Serial No. 09/679,550  
June 21, 2001

number 23494 as attorneys herein, and requesting change of correspondence address to customer number 23494. Those documents set forth the attorney designation and address which the undersigned wishes to be in effect.

Subsequent to the 3/26/01 filing, an inventors' declaration dated 2/28/01 was filed on or about 3/27/01 by the previous attorneys, including a different (and no longer applicable) designation of attorneys and correspondence address. To the extent not already revoked, that designation of attorneys and correspondence address is hereby revoked.

Also subsequent to the 3/26/01 filing, an inventors' declaration dated 4/4/01 and 4/9/01 was filed on or about 4/20/01, including a designation of attorneys and correspondence address substantially the same as those of the 3/26/01 filing.

To clarify any conflict or confusion created by the subsequently filed declarations, to the extent not now already in effect, the undersigned hereby reaffirms and repeats its 3/26/01 appointment of **Practitioners at customer number 23494** as attorneys to prosecute the application identified above, and to transact all Office business connected therewith; and reaffirms and repeats its 3/26/01 designation of the **address of customer number 23494** as the correspondence address for the above-identified application. The undersigned officer is authorized to act on behalf of the indicated assignee.

Respectfully submitted,



Texas Instruments Incorporated  
By: Wade James Brady, III  
Deputy General Patent Counsel & VP

Texas Instruments Incorporated  
P. O. Box 655474, MS 3999  
Dallas, TX 75265

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## ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt of which is hereby acknowledged, **LIBIT SIGNAL PROCESSING LTD.**, now renamed as **TEXAS INSTRUMENTS (ISRAEL) CABLE BROADBAND COMMUNICATIONS LTD.**, P.O. Box 12670, Herzlia 46766, Israel (hereinafter "ASSIGNOR"), hereby sells, transfers and assigns to **TEXAS INSTRUMENTS INCORPORATED**, a corporation organized and existing under the laws of the State of Delaware, having an office located at 7839 Churchill Way, MS 3999, Dallas, Texas 75251, and its successors and assigns (hereafter "ASSIGNEE"), the entire right, title and interest of ASSIGNOR in and to the invention described in:

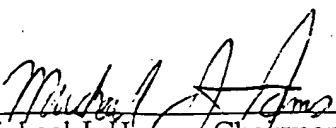
**U.S. Patent Application Serial No. 09/674,550, filed November 2, 2000, entitled "Method and Apparatus for Timing Recovery of Vestigial Sideband (VSB) Modulated Signals",**

and in and to said application, patent and any and all other patents which may be granted therefor, and all continuations, continuations-in-part, divisions, reissues, reexaminations, renewals, substitutions, and extensions thereof, and in and to any and all existing or hereafter accruing causes of action against third parties resulting from infringement of the same, and in and to the right to recover damages (including increased damages and attorney's fees) from third parties for any said infringement. ASSIGNOR hereby requests the Commissioner of Patents and Trademarks to issue all patents for said invention to said **TEXAS INSTRUMENTS INCORPORATED**, as ASSIGNEE of ASSIGNOR'S entire right, title and interest.

ASSIGNOR also hereby sells, transfers and assigns to **TEXAS INSTRUMENTS INCORPORATED**, its successors and assigns, any and all corresponding right, title and interest of ASSIGNOR in and to said invention, applications and patents in all countries other than the United States, including but not limited to any and all applications and patents corresponding thereto or derived therefrom in all countries of the world, including the right to claim priority therefrom, and to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agrees to execute any and all patent applications, assignments, affidavits and any other papers in connection therewith necessary to perfect such patent rights.

ASSIGNOR hereby covenants that ASSIGNOR has the right to make this assignment and that no other assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this agreement.

**LIBIT SIGNAL PROCESSING LTD.**, now renamed as  
**TEXAS INSTRUMENTS (ISRAEL) CABLE  
BROADBAND COMMUNICATIONS LTD.**

  
By: Michael J. Hames, Chairman (Officer)  
Dated: March 6, 2001

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**ASSIGNMENT**

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made, the said application having serial no. 09/674,550 filed November 2, 2000; and

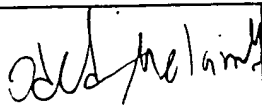
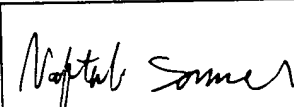

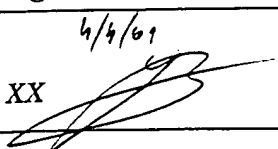
WHEREAS, TEXAS INSTRUMENTS INCORPORATED, a corporation organized and existing under the laws of the State of Delaware, with a place of business at 7839 Churchill Way, MS 3999, Dallas, Texas 75251, is desirous of acquiring my entire right, title and interest in and to the said invention, and to the said application and any Letters Patent that may issue thereon;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to the said TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, my entire right, title and interest in and to the said invention and in and to the said application and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, and extensions thereof; including provisional application number 60/084,063 filed May 4, 1998 and PCT application number PCT/IL99/00234 filed May 4, 1999; and I hereby authorize and request the Commissioner of Patents and Trademarks to issue all patents for said invention, or patent resulting therefrom, insofar as my interest is concerned, to the said TEXAS INSTRUMENTS INCORPORATED, as assignee of my entire right, title and interest.

I also hereby sell and assign to TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said TEXAS INSTRUMENTS INCORPORATED, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention, and at the expense of said assignee company, testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said TEXAS INSTRUMENTS INCORPORATED, its successors, assigns and nominees to obtain and enforce proper patent protection for said invention in all countries.


IN WITNESS WHEREOF, I hereunto set hand and seal this day and year;

<b>TITLE OF INVENTION</b>	<b>METHODS AND APPARATUS FOR TIMING RECOVERY OF VESTIGIAL SIDE BAND (VSB) MODULATED SIGNALS</b>		
<b>SIGNATURE OF INVENTOR AND NAME</b>	 <b>Oded Melamed</b>	 <b>Naftali Sommer</b>	 <b>Yigal Bitran</b>
<b>DATE</b>	<b>4.4.01</b> XX	<b>4-4-01</b> XX	<b>4/4/01</b> XX 
<b>RESIDENCE (City, County, State)</b>	<b>Shoham Israel</b>	<b>Rishon Le Zion Israel</b>	<b>Tel-Aviv Israel</b>

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<b>TITLE OF INVENTION</b>	<b>METHODS AND APPARTUS FOR TIMING RECOVERY OF VIESTIGIAL SIDE BAND (VSB) MODULATED SIGNALS</b>		
<b>SIGNATURE OF INVENTOR AND NAME</b>	 <b>Ofir Shalvi</b>		
<b>DATE</b>	<b>XX</b> 4.9.01		
<b>RESIDENCE (City, County, State)</b>	<b>Herzlia Israel</b>		

After recording return Assignment to:

Warren L. Franz  
Texas Instruments Incorporated  
P.O. Box 655474, M/S 3999  
Dallas, TX 75265

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## ASSIGNMENT

In consideration of One Dollar (\$1.00), and other good and valuable considerations, the Receipt of which is hereby acknowledged, I the undersigned, MELAMED, Oded residing at MELAMED, Oded, 59 Tarshish Street, Shoham 73142, Israel; SOMMER, Naftali residing at 3 Heletz Street, Rishon Lezion 75222, Israel; BITRAN, Yigal residing at 26 Alterman Street, Tel Aviv 69415, Israel; SHALVI, Ofir residing at 19 Tabenkin Street, Herzlia 46425, Israel

Hereby sell, assign and transfer to LIBIT SIGNAL PROCESSING LTD., an Israeli company located at 8 Hasadnaot Street, Herzelia 46728, Israel its successors, assigns and legal representatives, the entire right, title and interest for all countries, in and to any and all inventions which are disclosed and claimed, and as possessed by the undersigned, any and all inventions which are disclosed but not claimed in the application for United States Patent U.S. Serial No. 09/674,550 filed November 2, 200 and is entitled

METHODS AND APPARATUS FOR TIMING RECOVERY OF VESTIGIAL SIDEBAND (VSB)  
MODULATED SIGNALS

and in and to said application and all divisional, continuing, substitute, renewal, reissue, and all other applications for U.S. Letters Patent or other related property rights in any and all foreign countries which have been or shall be filed on any of said inventions disclosed in said application; and in and to all original and reissued patents or related foreign documents which have been or shall be issued on said inventions;

Authorize and request the Commissioner of Patents of the United States to issue to said Assignee, the corporation above named, its successors, assigns and legal representatives, in accordance with this assignment, any and all United States Letters Patent on said inventions or any of them disclosed in said application;

Agree that said Assignee may apply for and receive foreign Letters Patent or rights of any other kind for said inventions, or any of them; and may claim, in applications for said foreign Letters Patent or other rights, the priority of the aforesaid United States patent application under the provisions of the International Convention of 1883 and later modifications thereof, under the Patent Cooperation Treaty, under the European Patent Convention or under any other available international agreement; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns and legal representatives, to carry out in good faith the intent and purpose of this assignment, the under-signed or the undersigned's executors or administrators will, for the United States and all foreign countries, execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications or other documents on any and all said

inventions; execute all rightful claims, assignments, powers of attorney and other papers; communicate to said Assignee, its successors, assigns and representatives, all facts known and documents available to the undersigned relating to said inventions and the history thereof; testify in all legal proceedings; and generally do everything possible which said Assignee, its successors, assigns or representatives shall consider desirable for aiding in securing, maintaining and enforcing proper patent protection for said inventions and for vesting title to said inventions and all applications for patents or related foreign rights and all patents on said inventions, in said Assignee, its successors, assigns and legal representatives; and

**COVENANT** with said Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Date: Oded Melamed  
Witness: Oded Melamed [Signature]  
124 Yasmin St. [Name]  
Shoham, ISRAEL [Address]

MELAMED, Oded [L.S.]

Date: 11/3/01  
Witness: Cohen Osnat [Signature]  
66 Haarava St. [Name]  
Neve Yamin ISRAEL [Address]

SOMMER, Nafali [L.S.]

Date: 11/3/01  
Witness: Cohen Osnat [Signature]  
Cohen Osnat [Name]  
66-Haarava St. Neve Yamin [Address]  
ISRAEL

BITRAN, Yigal [L.S.]

Date: 11/3/01  
Witness: Cohen Osnat [Signature]  
Cohen Osnat [Name]  
66 Haarava St. Neve Yamin [Address]  
ISRAEL

SHALVI, Orr [L.S.]

inventions; execute all rightful oaths, assignments, powers of attorney and other papers; communicate to said Assignee, its successors, assigns and representatives, all facts known and documents available to the undersigned relating to said inventions and the history thereof; testify in all legal proceedings; and generally do everything possible which said Assignee, its successors, assigns or representatives shall consider desirable for aiding in securing, maintaining and enforcing proper patent protection for said inventions and for vesting title to said inventions and all applications for patents or related foreign rights and all patents on said inventions, in said Assignee, its successors, assigns and legal representatives; and

**COVENANT** with said Assignee, its successors, assigns and legal representatives that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Date: \* 1.3.01

Witness: \* Cohen O [Signature]

Cohen Osnat [Name]

66 Haarava St. Neve Yamin [Address]  
ISRAEL

\* Oded Melamed [L.S.]  
MELAMED, Oded

Date: \* 11.3.01

Witness: \* Cohen O [Signature]

Cohen Osnat [Name]

66 Haarava St. Neve Yamin [Address]  
ISRAEL

\* Naftali Sommer [L.S.]  
SOMMER, Naftali

Date: \* 1.3.01

Witness: \* Cohen O [Signature]

Cohen Osnat [Name]

66 Haarava St. Neve Yamin [Address]  
ISRAEL

\* Yigal Bitran [L.S.]  
BITRAN, Yigal

Date: \* 1/3/01

Witness: \* Cohen O [Signature]

Cohen Osnat [Name]

66 Haarava St. Neve Yamin [Address]  
ISRAEL

\* Orly Shalvi [L.S.]  
SHALVI, Orly

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